

What is claimed is:

A stent in the form of a thin-walled, multi-cellular, tubular structure having a longitudinal axis, the stent comprising:

a multiplicity of sets of strut members, each set of strut members being longitudinally separated each from the other and each set of strut members forming a closed, ring-like cylindrical section of the stent, each set of strut members consisting of a multiplicity of strut elements, each strut element consisting of one curved end strut that is joined at a junction point to one diagonal strut with each junction point being an end point of each curved end strut and each curved end strut having two end points and a center point that is centered between the two end points; and

a multiplicity of sets of flexible links with each set of flexible links connecting two of the multiplicity of sets of strut members, each set of flexible links consisting of a multiplicity of individual flexible links, each individual flexible link being a single undulating structure that extends generally in the longitudinal direction that is parallel to the stent's longitudinal axis and each individual flexible link having two ends, each one of the two ends being fixedly attached to one curved end strut of the multiplicity of strut elements at an attachment point situated between the center and one end of the curved end strut.

2. The stent of claim 1 wherein at least some of the individual flexible links are "J" links.
3. The stent of claim 1 wherein at least some of the individual flexible links are inverted "J" links.

4. The stent of claim 1 wherein at least some of the individual flexible links are "N" links.
5. The stent of claim 1 wherein at least some of the individual flexible links are inverted "N" links.
6. The stent of claim 1 wherein at least some of the individual flexible links are "M" links.
7. The stent of claim 1 wherein at least some of the individual flexible links are "W" links.
8. The stent of claim 1 wherein at least some of the individual flexible links are sine wave links.
9. The stent of claim 1 wherein each individual flexible link has an adjacent flexible link located on each side of the individual flexible link, and each individual flexible link is nested into both adjacent flexible links.
10. The stent of claim 1 wherein at least one of the generally longitudinally extending flexible links has a curved, generally circumferentially extending segment with the curve being generally parallel to an adjacent curved end strut of the multiplicity of strut elements.
11. The stent of claim 10 wherein at least one of the generally circumferentially extending segments is a generally straight segment.
12. The stent of claim 1 wherein the diagonal strut of at least one strut element has two curved segments that are joined at an inflection point.

13. The stent of claim 1 wherein a first set of strut members is an end set of strut members with one end set of strut members being situated at each end of the stent and a second set of strut members is a central set of strut members that is situated longitudinally between the end sets of strut members and the length of the diagonal struts of each of the two end sets of strut members of the stent is shorter than the length of the diagonal struts of the central sets of strut members.

14. A stent in the form of a thin-walled, multi-cellular, tubular structure having a longitudinal axis, the stent comprising:

a multiplicity of sets of strut members, each set of strut members being longitudinally separated each from the other and each set of strut members forming a closed, ring-like cylindrical section of the stent, each set of strut members consisting of a multiplicity of strut elements, each strut element consisting of one curved end strut that is joined at a junction point to one diagonal strut with each junction point being an end point of each curved end strut and each curved end strut having two end points and a center point that is centered between the two end points; and

at least one set of flexible links of a first type and at least one set of flexible links of a second type, each one of the two types of sets of flexible links being connected to two of the multiplicity of sets of strut members, each set of flexible links consisting of a multiplicity of individual flexible links, each individual flexible link being a single undulating structure that extends generally in the longitudinal direction that is parallel to the stent's longitudinal axis and each individual flexible link having two ends, each one of the two ends being fixedly attached to one curved end strut of the multiplicity of strut elements.

15. The stent of claim 14 wherein the stent has one end set of strut members located at each end of the stent and at least one central set of strut members situated

longitudinally there between, each of the two end sets of strut members being joined to a central set of strut members by a multiplicity of individual flexible "J" links.

16. The stent of claim 14 wherein the stent has one end set of strut members located at each end of the stent and at least one central set of strut members situated longitudinally there between, each of the two end sets of strut members being joined to a central set of strut members by a multiplicity of individual flexible inverted "J" links.
17. The stent of claim 14 wherein the stent has one end set of strut members located at each end of the stent and at least one central set of strut members situated longitudinally there between, each of the two end sets of strut members being joined to a central set of strut members by a multiplicity of individual flexible "N" links.
18. The stent of claim 14 wherein the stent has one end set of strut members located at each end of the stent and at least one central set of strut members situated longitudinally there between, each of the two end sets of strut members being joined to a central set of strut members by a multiplicity of individual flexible inverted "N" links.
19. The stent of claim 14 wherein the stent has one end set of strut members located at each end of the stent and at least one central set of strut members situated longitudinally there between, each of the two end sets of strut members being joined to a central set of strut members by a multiplicity of individual flexible sine wave links.
20. The stent of claim 14 wherein the stent has one end set of strut members at each end of the stent and at least two central sets of strut members situated longitudinally there between, each central set of strut members being joined to an

adjacent central set of strut members by a multiplicity of individual flexible "N" links.

21. The stent of claim 14 wherein the stent has one end set of strut members at each end of the stent and at least two central sets of strut members situated longitudinally there between, each central set of strut members being joined to an adjacent central set of strut members by a multiplicity of individual flexible inverted "N" links.
22. The stent of claim 14 wherein the stent has one end set of strut members at each end of the stent and at least two central sets of strut members situated longitudinally there between, each central set of strut members being joined to an adjacent central set of strut members by a multiplicity of individual flexible "M" links.
23. The stent of claim 14 wherein the stent has one end set of strut members at each end of the stent and at least two central sets of strut members situated longitudinally there between, each central set of strut members being joined to an adjacent central set of strut members by a multiplicity of individual flexible "W" links.
24. The stent of claim 14 wherein the stent has one end set of strut members at each end of the stent and at least two central sets of strut members situated longitudinally there between, each central set of strut members being joined to an adjacent central set of strut members by a multiplicity of individual flexible sine wave links.

25. A stent in the form of a thin-walled, multi-cellular, tubular structure having a longitudinal axis, the stent comprising:

a multiplicity of sets of strut members, each set of strut members being longitudinally separated each from the other and each set of strut members forming a closed, ring-like cylindrical section of the stent, each set of strut members consisting of a multiplicity of strut elements, each strut element consisting of one curved end strut that is joined at a junction point to one diagonal strut with each junction point being an end point of each curved end strut and each curved end strut having two end points and a center point that is centered between the two end points; and

a multiplicity of sets of flexible links with each set of flexible links connecting two of the multiplicity of sets of strut members, each set of flexible links consisting of a multiplicity of individual flexible links, each individual flexible link being a single undulating structure that extends generally in the longitudinal direction that is parallel to the stent's longitudinal axis and each individual flexible link having two ends, each one of the two ends being fixedly attached to one curved end strut of the multiplicity of strut elements, each flexible link having a link width as measured in a direction that is generally along the surface of the stent and a link wall thickness that is measured in a radial direction from the stent's longitudinal axis, the ratio of the link width to the link thickness being less than one.

26. The stent of claim 25 wherein the ratio of the link width to the link thickness is less than 0.8.

27.

A stent in the form of a thin-walled, multi-cellular, tubular structure having a longitudinal axis, the stent comprising:

a multiplicity of sets of strut members, each set of strut members being longitudinally separated each from the other and each set of strut members forming a closed, ring-like cylindrical section of the stent, each set of strut members consisting of a multiplicity of strut elements, each strut element consisting of one curved end strut that is joined at a junction point to one diagonal strut with each junction point being an end point of each curved end strut and each curved end strut having two end points and a center point that is centered between the two end points; and

a multiplicity of sets of flexible links with each set of flexible links connecting two of the multiplicity of sets of strut members, the multiplicity of sets of flexible links including a first set of flexible links consisting of a multiplicity of individual first flexible links, each individual first flexible link being a single undulating structure that extends generally in the longitudinal direction that is parallel to the stent's longitudinal axis, each individual first flexible link having at least two generally longitudinally extending curved segments and at least one generally circumferentially extending segment, and a second set of flexible links, each of the second set of flexible links including individual second flexible links, each individual second flexible link having at least four generally longitudinally extending curved segments and at least three generally circumferentially extending segments that are of approximately equal length.

28. The stent of claim 27 wherein the individual second flexible links are "M" links.

29. The stent of claim 27 wherein the individual second flexible links are "W" links.

30. The stent of claim 27 wherein the individual second flexible links have at least one circumferentially extending segment with a curved shape, the curve of the circumferentially extending segment being generally parallel to the curve of its adjacent curved end strut of the multiplicity of strut elements.

add B1  
add C1

add  
D2